Citation Key

for more information see: http://open.umich.edu/wiki/CitationPolicy

Use + Share + Adapt

{ Content the copyright holder, author, or law permits you to use, share and adapt. }

PD-GOV **Public Domain – Government**: Works that are produced by the U.S. Government. (17 USC § 105)

PD-EXP **Public Domain – Expired**: Works that are no longer protected due to an expired copyright term.

PD-SELF **Public Domain – Self Dedicated**: Works that a copyright holder has dedicated to the public domain.

CC ZERO **Creative Commons – Zero Waiver**

CC BY **Creative Commons – Attribution License**

CC BY-SA **Creative Commons – Attribution Share Alike License**

CC BY-NC **Creative Commons – Attribution Noncommercial License**

CC BY-NC-SA **Creative Commons – Attribution Noncommercial Share Alike License**

GNU-FDL **GNU – Free Documentation License**

Make Your Own Assessment

{ Content Open.Michigan believes can be used, shared, and adapted because it is ineligible for copyright. }

PD-INEL **Public Domain – Ineligible**: Works that are ineligible for copyright protection in the U.S. (17 USC § 102(b)) *laws in your jurisdiction may differ

{ Content Open.Michigan has used under a Fair Use determination. }

FAIR USE **Fair Use**: Use of works that is determined to be Fair consistent with the U.S. Copyright Act. (17 USC § 107) *laws in your jurisdiction may differ

Our determination **DOES NOT** mean that all uses of this 3rd-party content are Fair Uses and we **DO NOT** guarantee that your use of the content is Fair.

To use this content you should **do your own independent analysis** to determine whether or not your use will be Fair.

Cyberscience: Computational Science and the Rise of the Fourth Paradigm

GROUP: 1 QUANTITY: 1	SYSTEM PRICE: $19,024.72 GROUP TOTAL: $19,024.72
Base Unit:	PowerEdge C6100 Chassis w/ 4 System Boards and support for 2.5" Hard Drives (224-8427)
Processor:	Intel Xeon X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz Max Mem (317-4052)
Processor:	Intel Xeon X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz Max Mem (317-4052)
Processor:	Intel Xeon X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz Max Mem (317-4052)
Processor:	Intel Xeon X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz Max Mem (317-4052)
Processor:	Intel Xeon X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz Max Mem (317-4052)
Processor:	Intel Xeon X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz Max Mem (317-4052)
Processor:	Thermal Heatsink (317-3410)
Processor:	Thermal Heatsink (317-3410)
Processor:	Thermal Heatsink (317-3410)
Processor:	Thermal Heatsink (317-3410)
Processor:	Thermal Heatsink (317-3410)
Processor:	Thermal Heatsink (317-3410)
Processor:	Intel Xeon X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz Max Mem (317-4052)
Processor:	Intel Xeon X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz Max Mem (317-4052)
Processor:	Thermal Heatsink (317-3410)
Processor:	Thermal Heatsink (317-3410)
Processor:	Dual Processor Option (317-4928)
Memory:	48GB Memory (12x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized (317-3394)
Memory:	48GB Memory (12x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized (317-3394)
Memory:	48GB Memory (12x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized (317-3394)
Memory:	48GB Memory (12x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized (317-3394)
Memory:	Info, Memory for Dual Processor selection (468-7687)
Hard Drive:	500GB 7.2K RPM SATA 2.5" Hard Drive (342-0974)
Hard Drive:	500GB 7.2K RPM SATA 2.5" Hard Drive (342-0974)
Hard Drive:	500GB 7.2K RPM SATA 2.5" Hard Drive (342-0974)
Hard Drive:	500GB 7.2K RPM SATA 2.5" Hard Drive (342-0974)
Hard Drive:	CARR,HD,2.5,2LED,C6100,MLK (342-1032)
Hard Drive:	CARR,HD,2.5,2LED,C6100,MLK (342-1032)
Hard Drive:	CARR,HD,2.5,2LED,C6100,MLK (342-1032)

Honors 352, Class #0.13

August E. (Gus) Evrard, PhD

Fall 2010

University of Michigan

UNIVERSITY OF MICHIGAN

Cyberinfrastructure Days

Prizes of up to $500 awarded for best research posters!

- Present your research at a poster session
- Learn from nationally renowned leaders
- Share information and ideas about advanced, integrated computation and information resources and their use in research and learning
- Attend tutorials, presentations, and panels

Cyberinfrastructure is a platform of technological & human support for advanced, integrated computation and information resources in the service of research and learning.

High-performance computing (e.g., simulations, modeling, etc.) | Cloud computing | Advanced data management, sharing, & storage | Data collection techniques enabled by advanced information technologies | Advanced visualization | Network-mediated collaboration tools | Computer-mediated instrumentation / sensor networks | Web portals/middleware

Tuesday
November 2
5:30 pm – 8:00 pm
@ Michigan League
Reception & Poster Session

Wednesday
November 3
8:00 am – 4:45 pm
@ Palmer Commons
Keynote Speakers:
Larry Smarr, UC San Diego
Jimmy Lin, Univ of Maryland

Register at www.orci.research.umich.edu/cidays

This event is sponsored by U-M's Office of Research Cyberinfrastructure (ORCI) and Information and Technology Services (ITS).

today's news: China unveils 2.5 Tflop machine

Please see original article and image of China's 2.5 Tflop machine at
http://graphics8.nytimes.com/images/2010/10/28/business/Computer/Computer-popup.jpg.

today

* group project updates

* blackboard: architecture of modern supercomputers (SC)

    e.g., nodes for FLUX system @UM

* **in-class exercise**: consider fundamental requirements for SC design

* next TUESDAY's class meeting: **meet in LSA bldg (room TBD)**

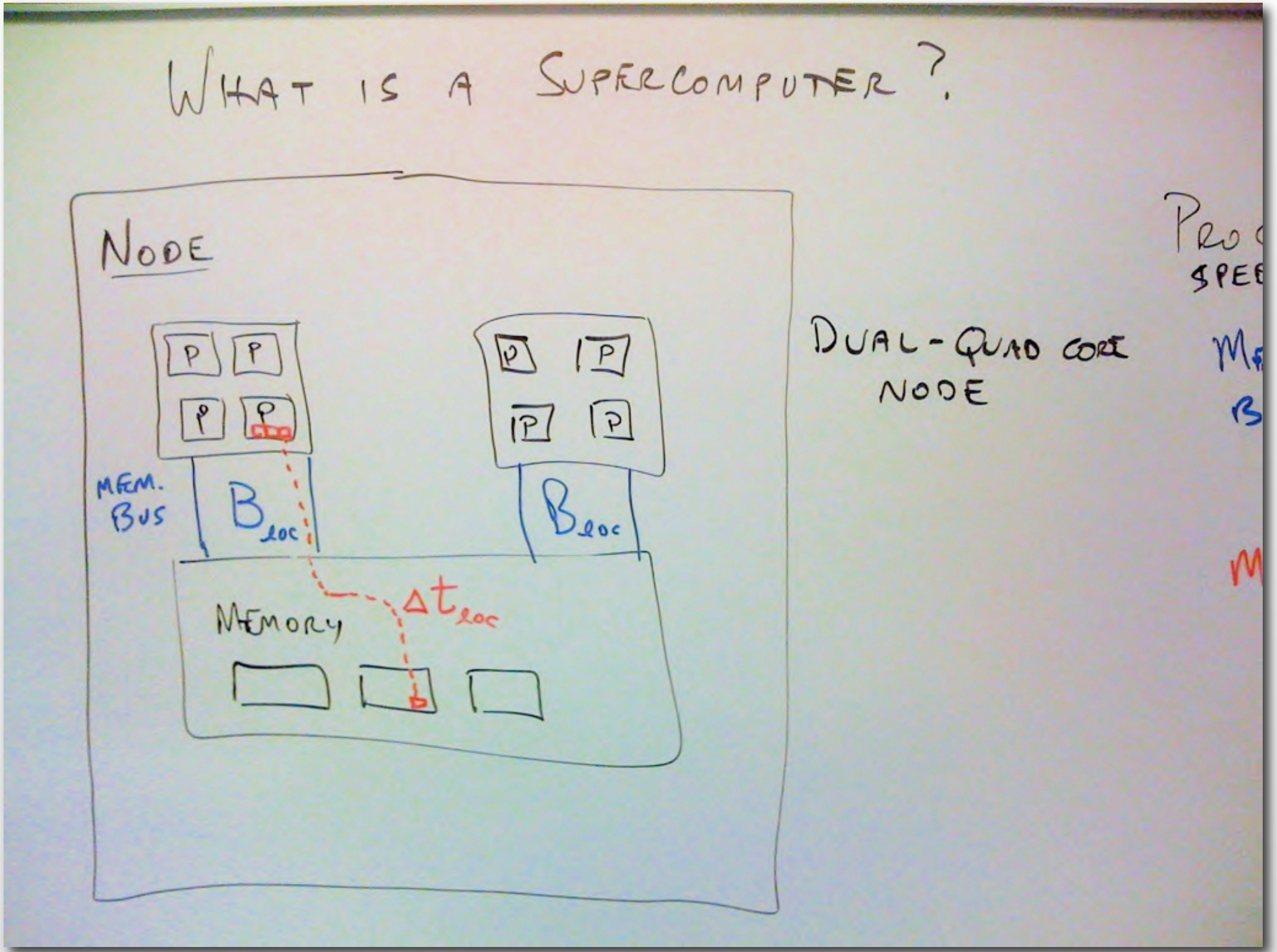
    LHC Atlas presentation by Dr. Shawn Mckee (Physics)

    tour of LHC Atlas Tier 2 machine in LSA server room

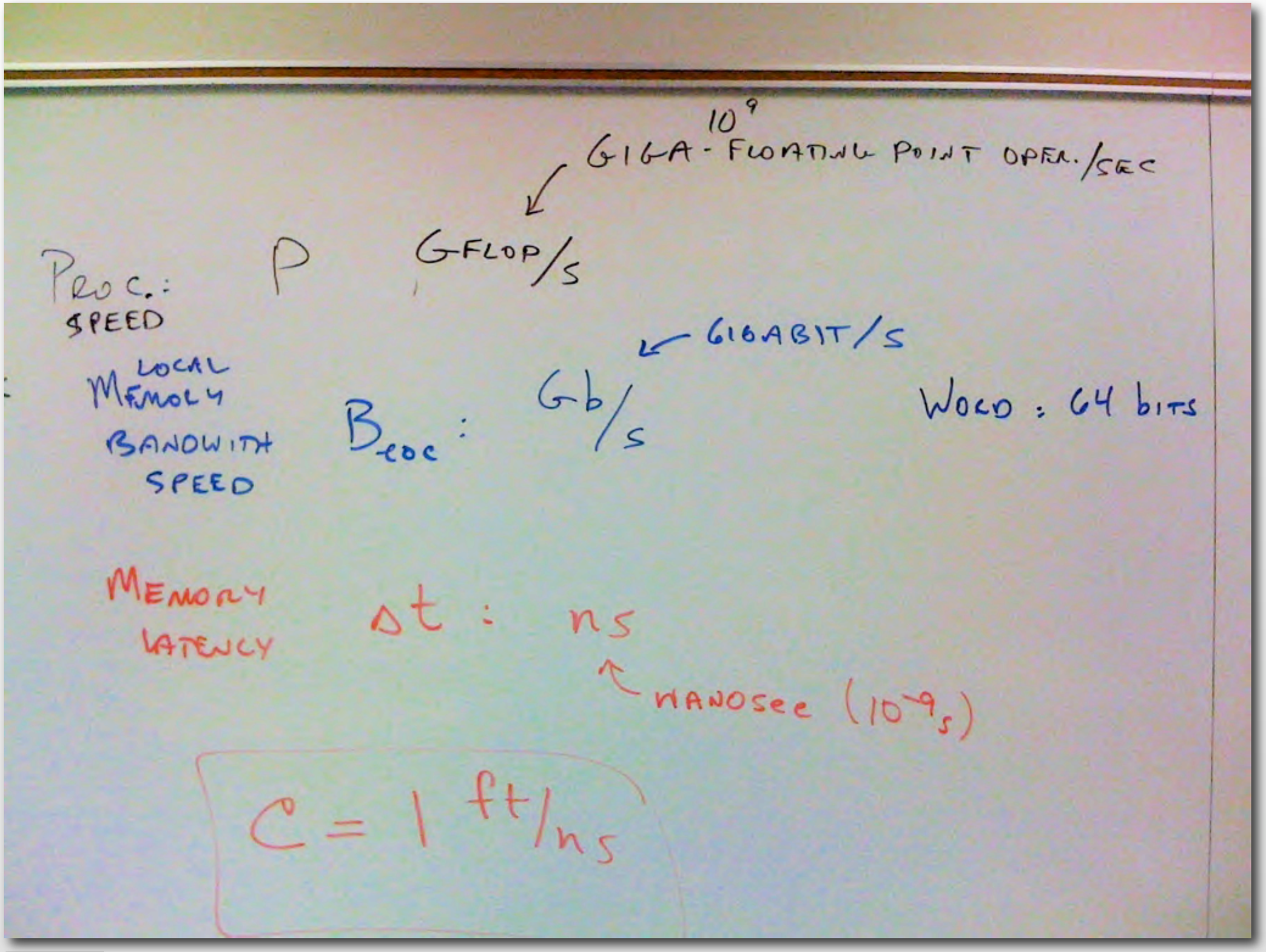
* midterm paper (1500-2000 words) due TODAY, 11:55pm

    *** ***Upload via Assignments in CTools*** ***

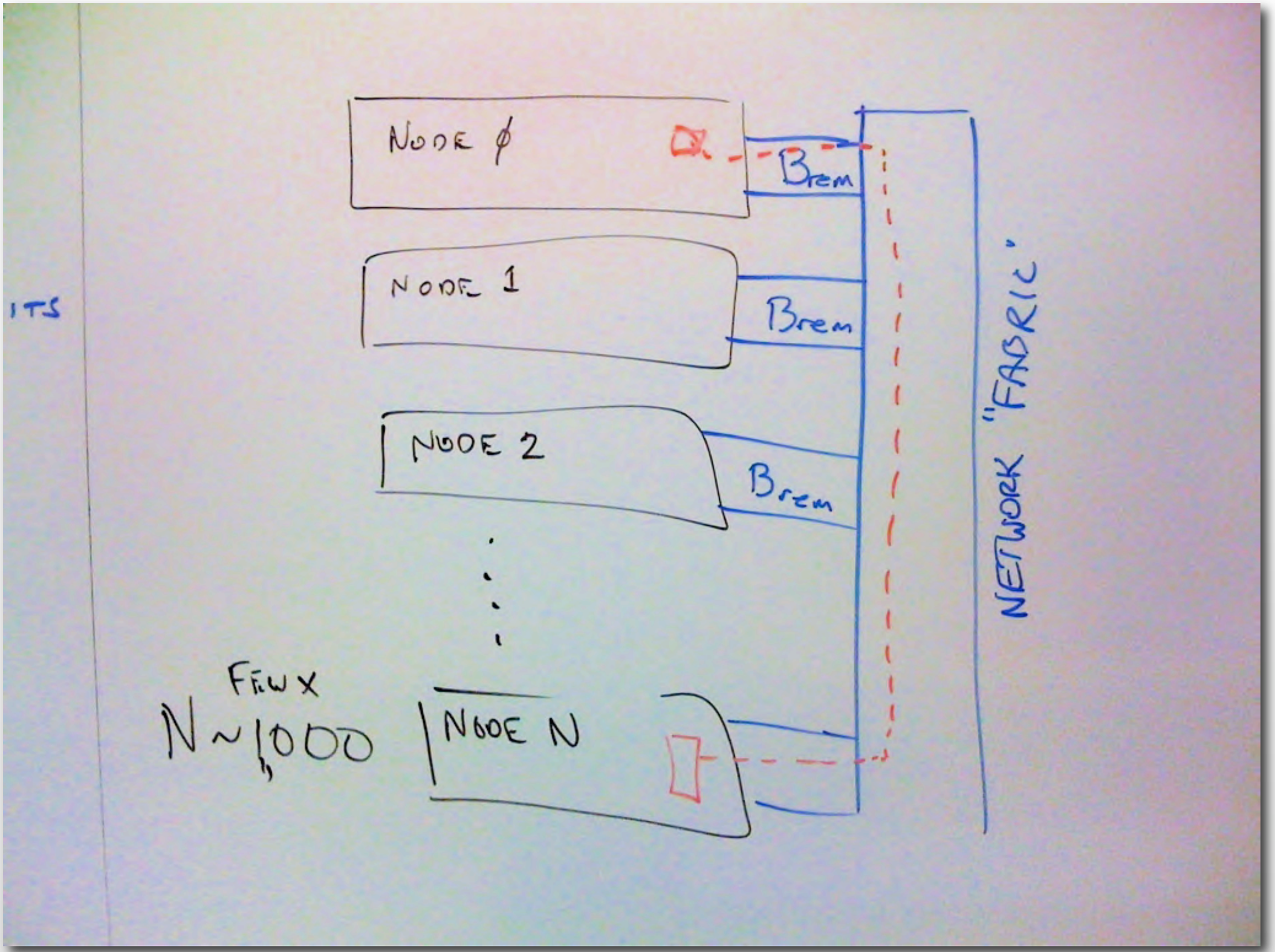
exercise: board 1



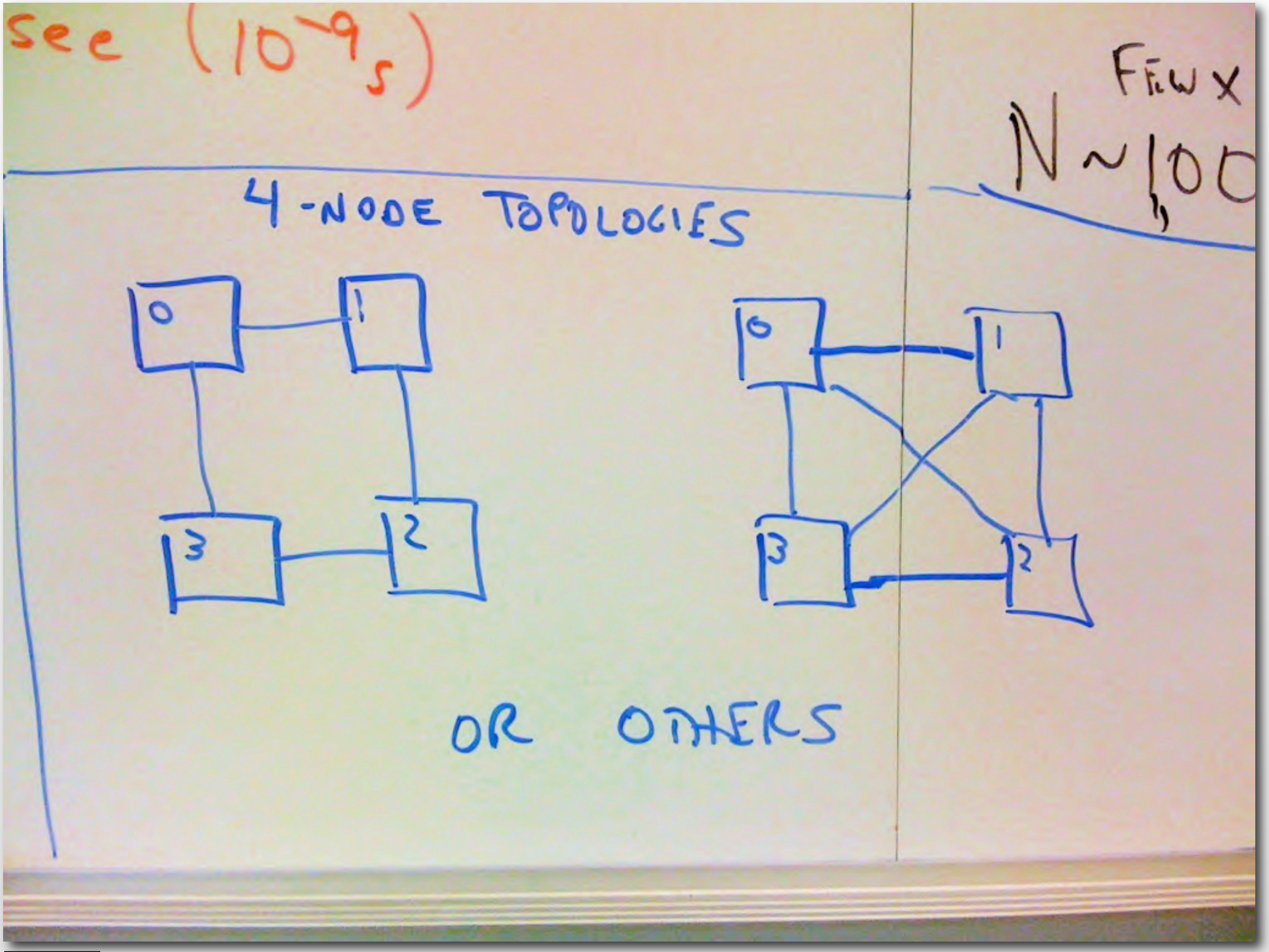
exercise: board 2



exercise: board 3



exercise: board 4



exercise: board 5

REMOTE BANDWIDTH B_{rem}

REMOTE LATENCY Δt_{rem}

APPLICATIONS

(1) SORT VERY LARGE ARRAY

$X(i+1) > X(i)$

(2) VECTOR MULTIPLY

$c(i) = a(i) * b(i)$

EXERCISE:

(1) DISCUSS DESIGN REQUIREMENTS IN TERMS OF P, B_{loc}, Δt_{loc}, B_{rem}, Δt_{rem}

(2) HOW IMPORTANT IS THE NETWORK "FABRIC"?

Additional Source Information

for more information see: http://open.umich.edu/wiki/CitationPolicy

Slide 3: Source Undetermined

Slide 4: Original flyer for an event that has already passed. For more information, please go to http://research.umich.edu/ci/cidays2010/

Slide 5: Please see original article and image of China's 2.5 Tflop machine at http://graphics8.nytimes.com/images/2010/10/28/business/Computer/Computer-popup.jpg.

Slide 7: A. E. Evrard, University of Michigan

Slide 8: A. E. Evrard, University of Michigan

Slide 9: A. E. Evrard, University of Michigan

Slide 10: A. E. Evrard, University of Michigan

Slide 11: A. E. Evrard, University of Michigan